TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Form PCT/IPEA/416
SP-20-514WO		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/JP2005/001222	28.01.2005	28.01.2004

International Patent Classification (IPC) or national classification and IPC

F16F9/14, E05F3/14, F16F9/32, F16F9/36, F16K17/04

Applicant

KABUSHIKI KAISHA SOMIC ISHIKAWA

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. ☒ *(sent to the applicant and to the International Bureau)* a total of 4 sheets, as follows:

      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s))

      _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2005/001222

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following _____ which is the language of a translation furnished for the purposes of:

☐ international search (Rule 12.3 and 23.1(b))

☐ publication of the international application (Rule 12.4)

☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-58 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

nos. 2,13 as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* 8-11,19-21 received by this Authority on 17.11.2005

nos.* 1,12 received by this Authority on 26.04.2006

☒ the drawings:

sheets 1-30 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☒ the claims, nos. 3-7,14-18,22-25

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2005/001222

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1, 2, 8-13, 19-21	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1, 2, 8-13, 19-21	NO
Industrial applicability (IA)	Claims	1, 2, 8-13, 19-21	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 06-503614 A (Multimatic Inc.), 21 April 1994, page 7, lower left column, line 1 to page 12, lower right column, line 5, fig. 1, fig. 2 and fig. 11 to 14 & US 5410777 A1 & EP 555271 A & WO 1992/8028 A2

Document 5: JP 08-303512 A (Kayaba Industry Co., Ltd.), 19 November 1996, paragraphs [0021] to [0024]; fig. 1 to 6 (Family: none)

Document 7: JP 2001-233516 A (Iseki & Co., Ltd.), 26 September 2001, paragraphs [0005], [0010]; fig. 4 (Family: none)

Document 8: JP 02-190635 A (Honda Motor Co., Ltd.), 26 July 1990, fig. 7 (Family: none)

Document 11: JP 11-325285 A (Hirose Valve Kogyo KK), 26 January 1999, paragraph [0019]; fig. 1 and 2 (Family: none)

The inventions set forth in claims 1, 2, 10, 12, 13 and 21 do not involve an inventive step in the light of documents 1 and 5 cited in the international search report and document 11 cited in the written opinion of the International Preliminary Examining Authority. In order to make the motion control device set forth in

document 1 more compact, it would not be particularly difficult for a person skilled in the art to provide the fluid control mechanism to the bottom floor of the chamber which houses the pressing member, as set forth in document 5, and to constitute the pressure escape valve and the check valve which are parts of the fluid control mechanism, as valves set forth in document 11. With regard to the valves set forth in document 11, it would be obvious to a person skilled in the art that the pressure-receiving surface of the valve is larger when the passage is open than when the passage is closed (see fig. 1 and fig. 2).

The inventions set forth in claims 8, 9, 19 and 20 do not involve an inventive step in the light of documents 1, 5 and 11 and document 7 cited in the international search report. It would not be particularly difficult for a person skilled in the art to combine the valve mechanism set forth in document 7, which is provided with other passages through which a fluid which has passed through the passage can pass, and fluid resistance is generated by reducing the flow rate of the fluid by the passage and other passage, with the inventions set forth in documents 1, 5 and 11.

The invention set forth in claim 11 does not involve an inventive step in the light of documents 1, 5 and 11 and document 8 cited in the international search report. Document 8 sets forth a motion control device comprising a passage which can reduce fluid resistance generated by pressing by a pressing member, and it would not be particularly difficult for a person skilled in the art to

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

combine this feature with the inventions set forth in documents 1, 5 and 11.

The Second Amendment under the Article 34 PCT, Filed 26 April 2006

CLAIMS

1. (Amended) A motion control apparatus comprising:

a pressing member pressing a fluid due to a rotating motion;

a fluid control mechanism closing a first flow path through which the fluid pressed by said pressing member passes by a valve body due to a pressure of a spring so as to block the fluid from moving, in the case where an external force applied to a movable body as a controlled object in a motion stop state is equal to or less than a predetermined value, opening said first flow path by said valve body being opened against the pressure of said spring so as to allow the movement of the fluid, in the case where the external force applied to said movable body goes over the predetermined value, and opening said first flow path by a pressure receiving surface of said valve body being enlarged in comparison with the time of closing said first flow path so as to be capable of continuing the movement of the fluid even if the external force is reduced to be equal to or less than the predetermined value, after the movement of the fluid is started; and

a delay mechanism delaying the closing motion of the valve body constituting said fluid control mechanism,

said motion control apparatus being capable of holding the motion stop state of said movable body by utilizing a resistance of the fluid generated by said pressing member pressing the fluid, and being capable of continuing the motion of said movable body by a smaller external force than that at a time of starting the motion, by means of said fluid control mechanism, after the movement of said movable body is started,

wherein said fluid control mechanism is provided in a bottom wall of a chamber in which said pressing member is accommodated.

2. A motion control apparatus as claimed in claim 1, further comprising a seal member sealing a gap formed between a movable member including said pressing member and a non-movable member, and preventing the fluid from moving through

said gap.

3.

4.

5.

6. (Cancelled)

7.

8. A motion control apparatus as claimed in claim 1, further comprising:

a third flow path through which the fluid is allowed to pass;

a valve mechanism closing said third flow path by the valve body so as to block the movement of the fluid, in the case where the external force applied to said movable body in the motion stop state is less than a predetermined value, and opening said third flow path so as to allow the movement of the fluid, in the case where the external force applied to said movable body reaches the predetermined value; and

a fourth flow path through which the fluid passing through said third flow path is allowed to pass,

wherein a resistance of the fluid is generated by throttling a flow volume of the fluid moving through said fourth flow path by said fourth flow path.

9. A motion control apparatus as claimed in claim 1, further comprising:

a fifth flow path through which the fluid is allowed to pass; and

a valve mechanism closing said fifth flow path by the valve body so as to block the movement of the fluid, in the case where the external force applied to said movable body in the motion stop state is less than a predetermined value, and

opening said fifth flow path so as to allow the movement of the fluid, in the case where the external force applied to said movable body reaches the predetermined value,

wherein a resistance of the fluid is generated by throttling a flow volume of the fluid moving through said fifth flow path by said fifth flow path.

10. A motion control apparatus as claimed in claim 1, further comprising a sixth flow path capable of making the fluid passing through said first flow path flow into a chamber in which an internal pressure is reduced due to a rotating motion of said pressing member,

wherein said sixth flow path is structured such as to be allowed to pass the fluid therethrough without throttling a flow volume of the fluid.

11. A motion control apparatus as claimed in claim 1, further comprising a seventh flow path capable of reducing a resistance of the fluid generated by being pressed by said pressing member in a part of an angular range at which said pressing member is allowed to move.

12. (Amended) A door of a motor vehicle comprising:

a motion control apparatus built in a door main body; and

a transmission member transmitting an external force applied to the door main body to said motion control apparatus,

wherein said motion control apparatus comprises:

a shaft to which the external force applied to the door main body is transmitted via said transmission member;

a pressing member executing a rotating motion in accordance with a rotation of said shaft and pressing a fluid;

a fluid control mechanism closing a first flow path through which the fluid pressed by said pressing member passes by a valve body due to a pressure of a spring so as to block the fluid from moving, in the case where an external force applied to

said door main body in a motion stop state is equal to or less than a predetermined value, opening said first flow path due to an opening motion of said valve body against the pressure of said spring so as to allow the movement of the fluid, in the case where the external force applied to said door main body goes over the predetermined value, and opening said first flow path due to the pressure receiving surface of said valve body being enlarged in comparison with the time of closing said first flow path so as to be capable of continuing the movement of the fluid even if the external force is reduced to be equal to or less than the predetermined value, after the movement of the fluid is started; and

a delay mechanism delaying the closing motion of the valve body constituting said fluid control apparatus,

said motion control apparatus being capable of holding the motion stop state of said door main body by utilizing a resistance of the fluid generated by said pressing member pressing the fluid, and being capable of continuing the motion of said door main body by a smaller external force than that at a time of starting the motion, by means of said fluid control mechanism, after the movement of said door main body is started,

wherein said fluid control mechanism is provided in a bottom wall of a chamber in which the pressing member of said motion control apparatus is accommodated.

13. A door of a motor vehicle as claimed in claim 12, wherein said motion control apparatus is provided with a seal member sealing a gap formed between a movable member including said pressing member and a non-movable member, and preventing the fluid from moving through said gap.

14.

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16.

17. (Cancelled)

18.

19. A door of a motor vehicle as claimed in claim 12, wherein said motion control apparatus comprises:

a third flow path through which the fluid is allowed to pass;

a valve mechanism closing said third flow path by the valve body so as to block the movement of the fluid, in the case where the external force applied to said door main body in the motion stop state is less than a predetermined value, and opening said third flow path so as to allow the movement of the fluid, in the case where the external force applied to said door main body reaches the predetermined value; and

a fourth flow path through which the fluid passing through said third flow path is allowed to pass,

wherein a resistance of the fluid is generated by throttling a flow volume of the fluid moving through said fourth flow path by said fourth flow path.

20. A door of a motor vehicle as claimed in claim 12, wherein said motion control apparatus comprises:

a fifth flow path through which the fluid is allowed to pass; and

a valve mechanism closing said fifth flow path by the valve body so as to block the movement of the fluid, in the case where the external force applied to said door main body in the motion stop state is less than a predetermined value, and opening said fifth flow path so as to allow the movement of the fluid, in the case where the external force applied to said door main body reaches the predetermined value,

wherein a resistance of the fluid is generated by throttling a flow volume of

the fluid moving through said fifth flow path by said fifth flow path.

21. A door of a motor vehicle as claimed in claim 12, wherein said motion control apparatus is provided with a sixth flow path capable of making the fluid passing through said first flow path flow into a chamber in which an internal pressure is reduced due to a rotating motion of said pressing member, and said sixth flow path is structured such as to be allowed to pass the fluid therethrough without throttling a flow volume of the fluid.

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